

IN THE SPECIFICATION

Please amend the specification as follows:

Page 1, paragraph 1:

This application is related to commonly-owned, co-pending U.S. Patent Application No. 09/840,203 (Docket No. 701584), which is entitled "A HYBRID FREQUENCY-TIME DOMAIN EQUALIZER", filed on April 23, 2001, and incorporated herein by reference in its entirety.

Page 2, paragraph 1:

Decision Feedback Equalization is a technique used to eliminate all inter-symbol interference (ISI) caused by the transmission channel in digital communication systems. Figure 1 is a schematic illustration of a typical Decision Feedback Equalizer (DFE) system 10. As shown in Figure 1, the typical DFE includes a feed forward path including a first finite impulse response (FIR) filter 12, a feedback path 13 including a second FIR filter 14, a decision device 15, and, an error calculator 18. The input symbol x_n represents the symbol inputs which are input to the first finite impulse response (FIR) filter 12. It is understood that first and second FIR filters 12, 14 are linear transversal filters each representing an adaptive transfer function $f(n)$, $g(n)$, respectively according to respective sets of adaptable coefficients f_n , g_n . In operation, the output of the first FIR filter 12 is summed with the output of the feedback FIR filter 14 section to provide a desired DFE output represented as signal v_n 20. In operation, the coefficients of each

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of the forward FIR filter 12 and feedback FIR filter 14 recursively adapt according to an output error signal e_n 16 of the feedback path until some convergence factor or error metric, e.g., mean square error, is satisfied. As shown in Figure 1, the output error signal e_n 16 of the feedback path represents the difference between an input reference signal 21, i.e. a desired output signal, and an intermediate output signal y_n 24 which is an output of decision block 15. As known to skilled artisans and described in "Adaptive Decision-Feedback Equalizer" in the book "Digital Communications" by John G. Proakis, McGraw-Hill, 1995, 3rd ed., Ch. 11-2, pages 650 et seq., (ISBN 0-07-05-51726-6), the whole contents and disclosure of which is incorporated by reference as if fully set forth herein, the equalizer coefficients are adjusted recursively in the adaptive mode of the DFE.

Page 5, paragraph 4:

Figure 2 is a simplified block diagram of a hybrid Frequency-Time Domain Equalizer 50 to which the initialization scheme of the present invention is incorporated. As described in greater detail in commonly-owned, co-pending U.S. Patent Application No. 09/840,203 (Docket No. 701584), which is entitled "A HYBRID FREQUENCY-TIME DOMAIN EQUALIZER" herein incorporated, the Decision Feedback Equalizer is a hybrid type equalizer having a frequency domain (FD) equalizer 52 in the forward path and a time-domain (TD) equalizer 54 in the feedback path. The present invention is directed to a scheme for initializing the filter tap coefficients in both the FD and TD paths.

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As described in greater detail in commonly-owned, co-pending U.S. Patent Application No. 09/840,203 _____ (Docket No. 701584), the main difference between a standard DFE of Figure 1 and this hybrid FD-TD equalizer is in the use of the frequency domain equalizer in its forward path. While both the forward frequency domain (FD) equalizer and time-domain (TD) feedback equalizer are adapted using the same error vector 16, the update of the FD portion is performed in the frequency domain, while the update of the feedback TD filter coefficients is done in the conventional sample-by-sample time-domain update. The error vector may be computed using blind decision-directed algorithm Constant Modulus Algorithm (CMA) as known to those skilled in the art. The choice of a hybrid equalizer is preferable as initial convergence speed and tracking is enhanced by adapting the taps (the frequency bins) individually.